



# Caloosahatchee River and Estuary Basin Management Action Plan BMAP Public Meeting

January 2020



# Agenda

- Background
- Overview of the BMAP Update
- Next Steps



# Background

*Caloosahatchee Estuary and Tributaries TMDLs*

*Caloosahatchee River and Estuary BMAP*

*5-Year Review*

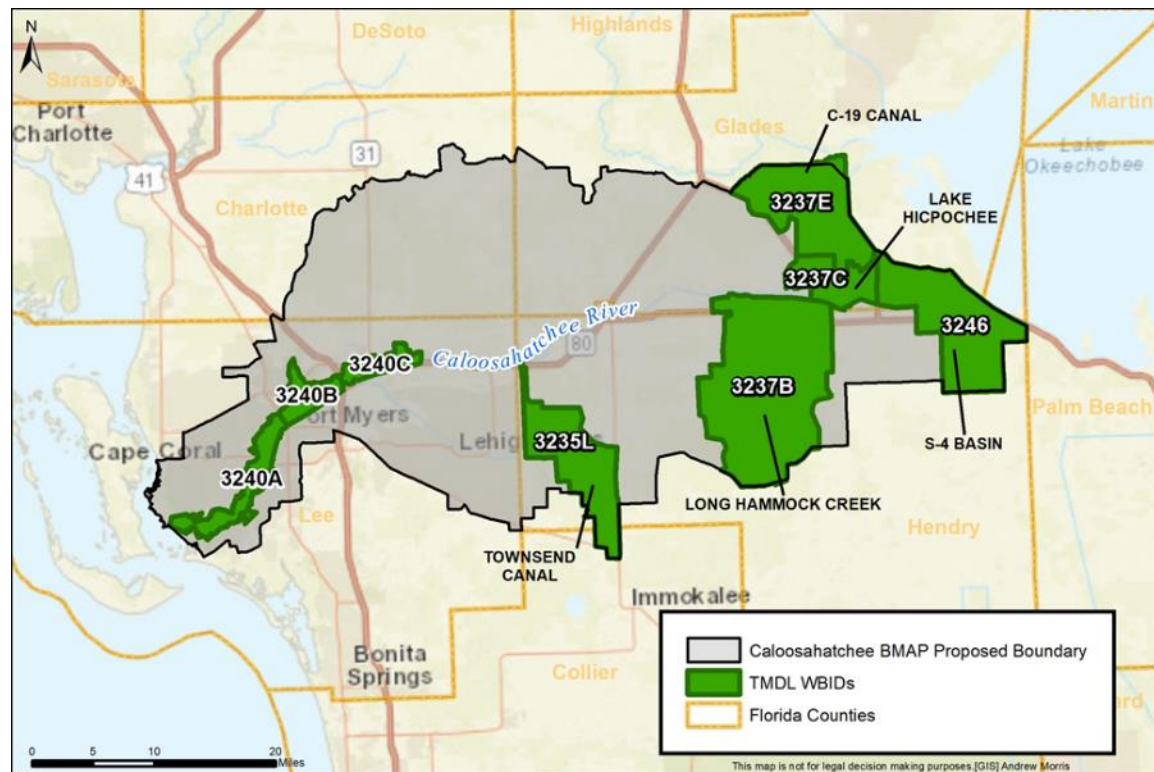
*Executive Order 19-12*



# Background Information

## *1.1.1 Caloosahatchee Estuary and Tributary TMDLs*

- Estuary total maximum daily load (TMDL) for total nitrogen (TN) adopted in 2009
- Tributaries TMDL for TN and total phosphorus (TP) adopted in 2019







# Milestone Progress

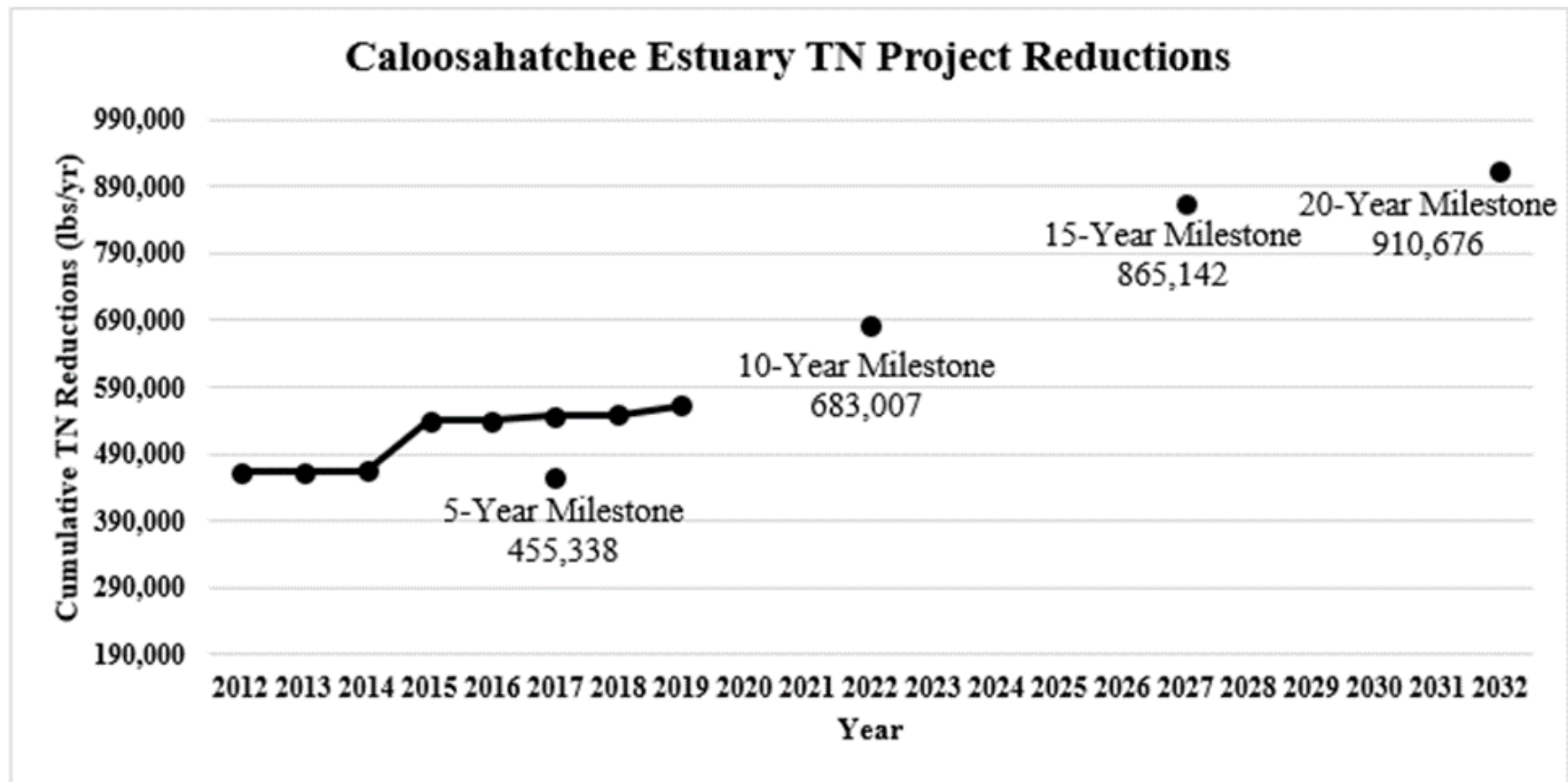


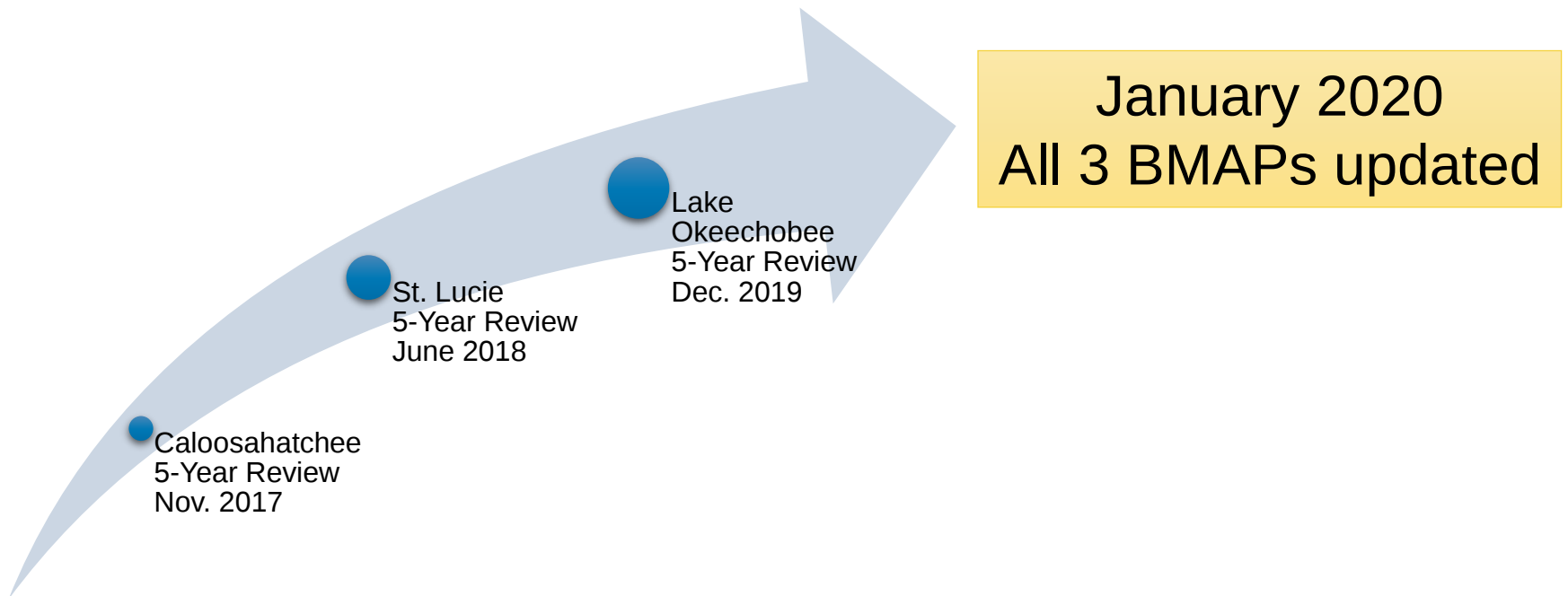
Figure ES-2. Estimated progress towards meeting the Caloosahatchee Estuary TN TMDL with projects completed through October 31, 2019



# Executive Order 19-12

## *BMAP Directives*

- Update restoration plans impacting South Florida communities within the year, including:





# BMAP Update Process

- Public meetings in 2019:
  - March 25, June 25, Aug. 27, Nov. 6, Dec. 20
- Draft report posted December 2019
  - Public comment period Dec. 27, 2019 – Jan. 15, 2020
- Comments reviewed and draft edited
- Updated draft report posted January 17, 2020
  - Adjusted several tables to clarify information\*
  - Incorporated clarification in source requirements sections
  - Replaced placeholder figures and tables in **Appendix B**
  - Corrected project table details

\* denotes changes that were not included in the Jan. 17 version



# Questions





# Draft BMAP Update

*Chapter 2 – Modeling, Load Estimates, and  
Restoration Approach*

*Chapter 3 – Subwatersheds*

*Chapter 4 – Summary*

*Appendices A through D*



# Modeling, Load Estimates, and Restoration Approach

## *Chapter 2*

- 2.1 - BMAP Modeling
- 2.2 - Calculation of Starting Loads and Allocations
- 2.3 - Basinwide Sources Approach
- 2.4 - TRA Approach
- 2.5 - Water Quality Monitoring Plan



# Modeling, Load Estimates and Restoration Approach

**Restructured Sections 2.1 and 2.2 to better explain model updates and allocations**

- 2.1. BMAP Modeling
  - 2.1.1 Hydrological Simulation Program - FORTRAN (HSPF) Model and Revisions
  - 2.1.2 Use of HSPF Model for Allocations
  - 2.1.3 Use of Model for Project Estimates



# Modeling, Load Estimates, and Restoration Approach

- 2.2. Calculations of Starting Loads and Allocations
  - 2.2.1. Starting Loads
  - 2.2.2. Allocation of Load Reductions
    - 2.2.2.1 Low Priority Ranking Designation

\*Revised Tables 12 and 18 to track new text structure



# Modeling, Load Estimates, and Restoration Approach

**Table 12. Watershed TN starting loads to the estuary by entity**

| Entity                         | Acres          | TN starting load to the estuary (lbs/yr) |
|--------------------------------|----------------|------------------------------------------|
| Agriculture                    | 404,890        | 2,815,061                                |
| Charlotte County               | 4,142          | 23,132                                   |
| City of Cape Coral             | 26,404         | 154,987                                  |
| City of Clewiston              | 1,941          | 6,482                                    |
| City of Fort Myers             | 9,742          | 77,536                                   |
| City of LaBelle                | 2,137          | 11,733                                   |
| City of Moore Haven            | 642            | 1,796                                    |
| Collier County                 | 26             | 58                                       |
| FDOT                           | 5,085          | 25,291                                   |
| Glades County                  | 9,478          | 28,437                                   |
| Hendry County/Port LaBelle CDD | 20,190         | 64,165                                   |
| Lee County                     | 42,389         | 235,590                                  |
| Lehigh Acres MSID              | 54,932         | 162,252                                  |
| Lucaya CDD                     | 41             | 350                                      |
| Moody River Estates CDD        | 249            | 1,687                                    |
| Portico CDD                    | 251            | 1,204                                    |
| River Hall CDD                 | 1,244          | 6,667                                    |
| Sail Harbour CDD               | 44             | 505                                      |
| Verandah East CDD              | 452            | 2,119                                    |
| Verandah West CDD              | 489            | 3,279                                    |
| Natural Lands                  | 262,618        | 333,189                                  |
| WCD Canals                     | 983            | 3,940                                    |
| <b>Total</b>                   | <b>848,368</b> | <b>3,959,461</b>                         |

**Table 18. Entity contributions to total TN starting load to the estuary with low priority ranking cutoff**

**Note:** Grey highlighting and boldface type indicate jurisdictions meeting the classification requirements for low priority.

| Entity                         | TN Starting Load (lbs/yr) | % of Total TN Starting Load |
|--------------------------------|---------------------------|-----------------------------|
| Agriculture                    | 2,815,061                 | 77.71                       |
| Lee County                     | 235,590                   | 6.50                        |
| LA-MSID                        | 162,252                   | 4.48                        |
| City of Cape Coral             | 154,987                   | 4.28                        |
| City of Fort Myers             | 77,536                    | 2.14                        |
| Hendry County/Port LaBelle CDD | 64,165                    | 1.77                        |
| FDOT                           | 25,291                    | 0.70                        |
| Glades County                  | 28,437                    | 0.79                        |
| Charlotte County               | 23,132                    | 0.64                        |
| City of LaBelle                | 11,733                    | 0.32                        |
| River Hall CDD                 | 6,667                     | 0.18                        |
| City of Clewiston              | 6,482                     | 0.18                        |
| Verandah West CDD              | 3,279                     | <b>0.09</b>                 |
| Verandah East CDD              | 2,119                     | <b>0.06</b>                 |
| City of Moore Haven            | 1,796                     | <b>0.05</b>                 |
| Moody River Estates CDD        | 1,687                     | <b>0.05</b>                 |
| Portico CDD                    | 1,204                     | <b>0.03</b>                 |
| Sail Harbour CDD               | 505                       | <b>0.01</b>                 |
| Lucaya CDD                     | 350                       | <b>0.01</b>                 |
| Collier County                 | 58                        | <b>0.002</b>                |
| Natural Lands                  | 333,189                   | N/A                         |
| WCD Canals                     | 3,940                     | N/A                         |
| <b>Total</b>                   | <b>3,959,461</b>          | <b>100.0</b>                |



# Restoration Approach

## *2.3. Basinwide Sources Approach*

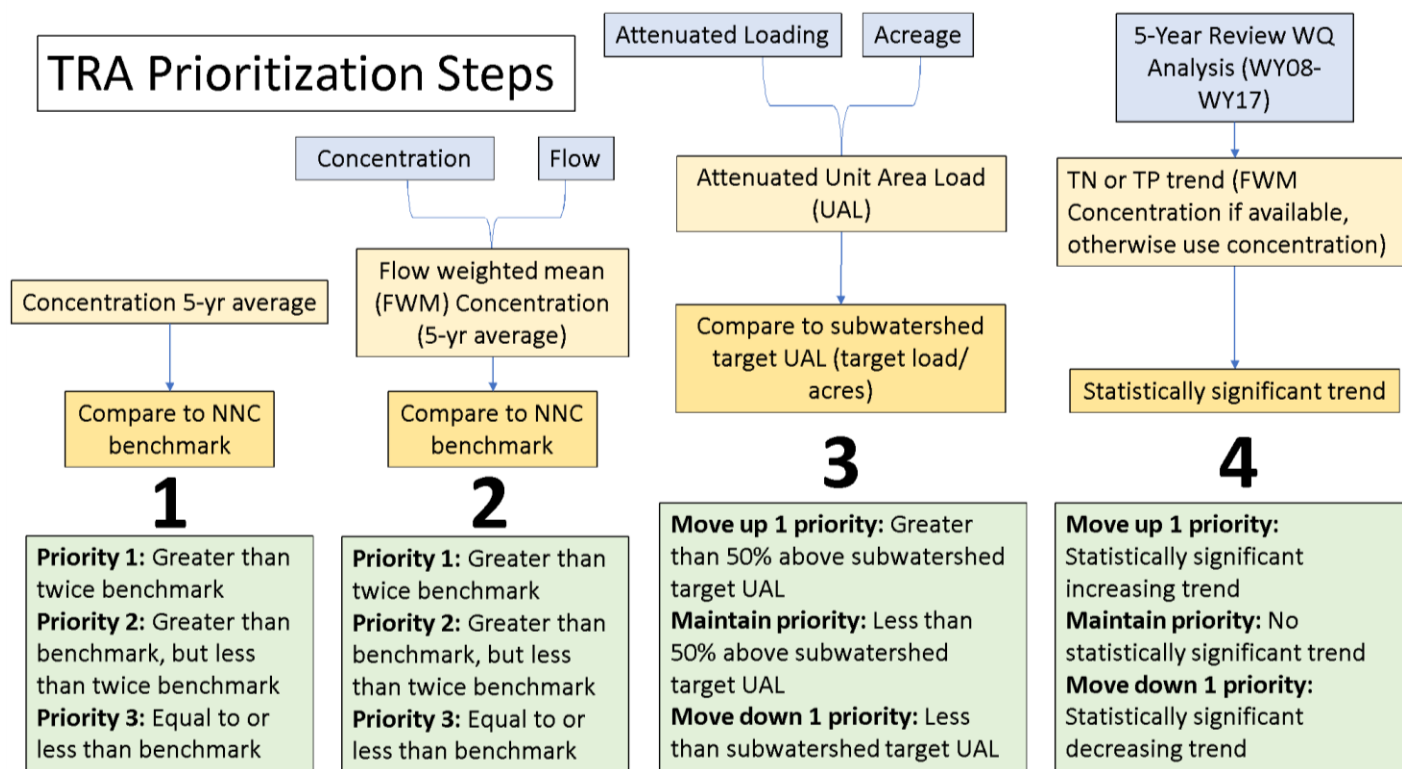
- Incorporated clarification language in source requirements sections:
  - 2.3.1. Agriculture
    - Adjusted cost-share language, clarified fertilizer use summary language\*
  - 2.3.2. Septic Systems
    - Corrected **Table 21** Septic System Counts by Subwatershed
  - 2.3.3. Stormwater
    - Better aligned language with municipal separate storm sewer system (MS4) rules
  - 2.3.4. Wastewater Treatment
    - Clarification text added\*



# Restoration Approach

## 2.4 TRA Approach

- 2.4.1 Overview
- 2.4.2. Evaluation
  - Clarification of several steps

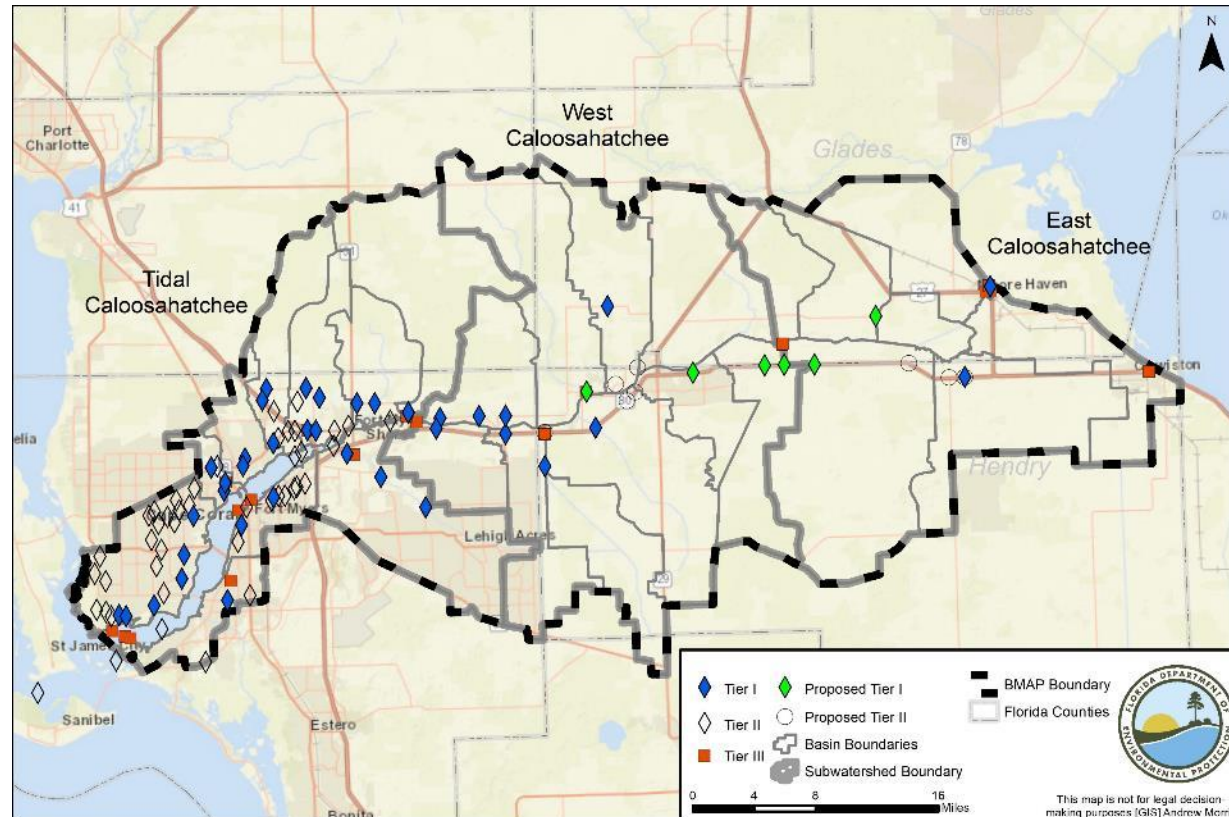




# Restoration Approach

## 2.5 Water Quality Monitoring Plan

- 2.5.1. Objectives and Parameters
  - Title changed
  - Matched parameter names with Watershed Information Network (WIN), where appropriate
- 2.5.2. Monitoring Network
- 2.5.3. Data Management and QA/QC





# Subwatersheds

## *Chapter 3*

- **Section 3.1** through **Section 3.3**
- Land use summaries based on HSPF
- Monitoring network stations
  - Added one proposed station to East Caloosahatchee Subwatershed
  - S-79 corrected to reflect “in river” for West Caloosahatchee Subwatershed
- Priority results of the TRA evaluation
- Project tables
  - Corrected project table details



# Subwatersheds

*(Continued)*

**Table 35. Summary of land uses in the West Caloosahatchee Subwatershed**

| HSPF<br>Land Use<br>Code | Land Use Description                    | Acres          | % Total      |
|--------------------------|-----------------------------------------|----------------|--------------|
| 1                        | Low Density Residential                 | 36,140         | 10.6         |
| 2                        | Developed Open Space/Disturbed          | 7,888          | 2.3          |
| 3                        | Medium Density Residential              | 2,752          | 0.8          |
| 4                        | High Density Residential                | 235            | 0.1          |
| 5                        | Commercial/Institutional/Transportation | 1,334          | 0.4          |
| 6                        | Industrial/Extractive                   | 1,066          | 0.3          |
| 7                        | FDOT Right-of-Way                       | 1,569          | 0.5          |
| 8                        | Sugar Cane                              | 2,290          | 0.7          |
| 9                        | Row and Field Crops                     | 9,822          | 2.9          |
| 10                       | Nurseries/Ornamentals/Vineyards         | 931            | 0.3          |
| 11                       | Citrus Groves/Other Groves              | 54,891         | 16.2         |
| 12                       | Improved Pasture                        | 58,592         | 17.2         |
| 13                       | Rangeland/Unimproved Pasture/Shrub      | 46,977         | 13.8         |
| 14                       | Upland Forest                           | 55,589         | 16.4         |
| 15                       | Wetland                                 | 56,212         | 16.5         |
| 16                       | Water                                   | 3,476          | 1.0          |
| <b>Total</b>             |                                         | <b>339,764</b> | <b>100.0</b> |



# Subwatersheds

*Draft monitoring in the West subwatershed*

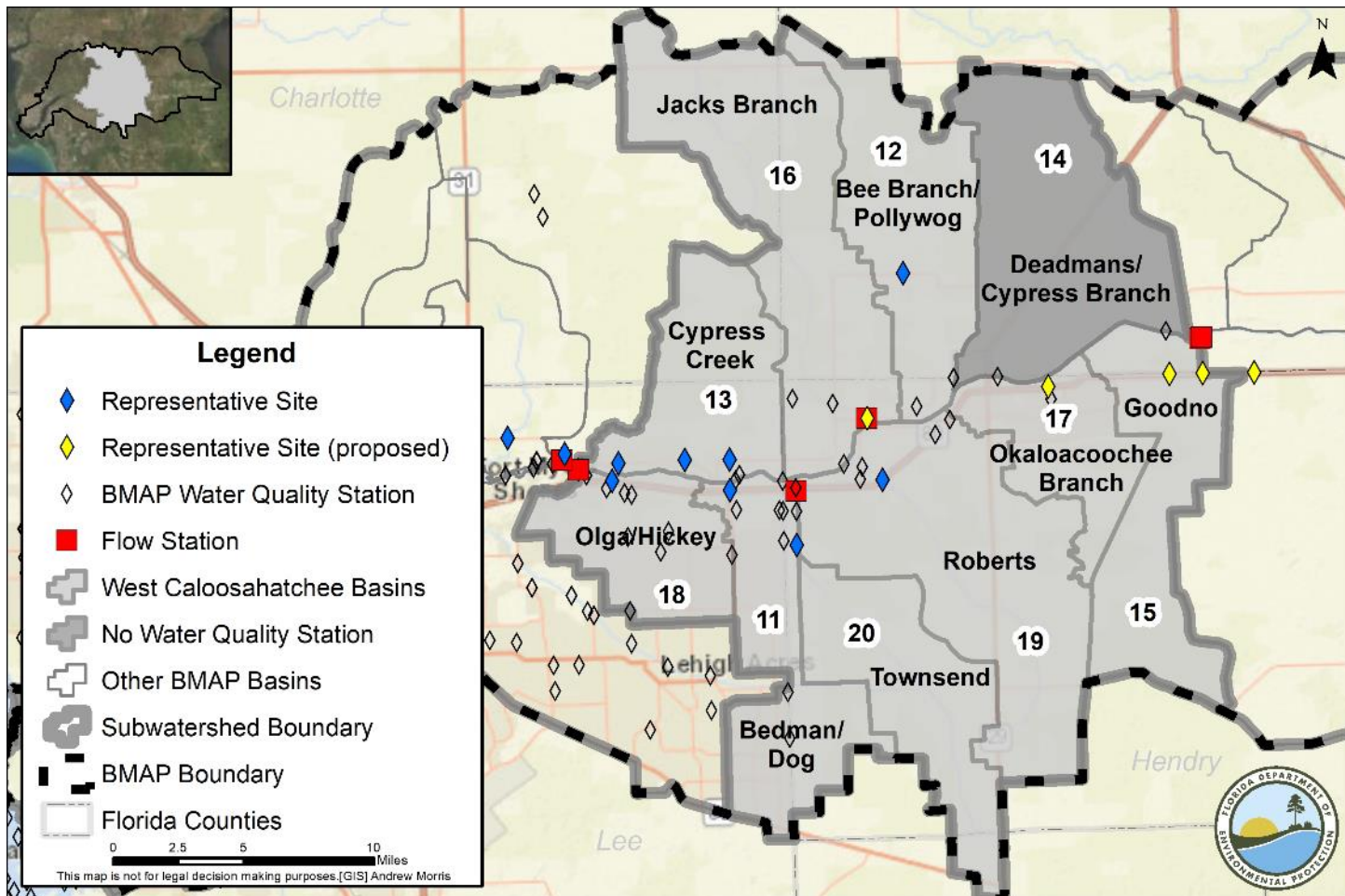


Figure 6. West Caloosahatchee Subwatershed monitoring stations



# Summary

## *Chapter 4*

- 4.1 TRA Evaluation Results
- 4.2 Request for Information (RFI) Summary
  - Clarified potential future steps for RFI submittals
- 4.3 Future Growth
- 4.4 Compliance



# Appendix A

## *BMAP Projects Supporting Information*

- Provides additional details for the project tables included in **Chapter 3**
- Explains the standardized categories for the project status
- Includes definitions of the terms used in the tables

\*Clarified BMAP goal of 20 years from adoption of original BMAP



# Appendix B

## *Agricultural Enrollment and Reductions*

- FDACS' Role in BMP Implementation and Followup
- Adopted BMAP Agricultural Land Use and Enrollment
- Unenrolled Agricultural Acreage
  - Figures and tables now included

**Table B-7. Summary of unenrolled agricultural land use acreage in the Caloosahatchee River and Estuary BMAP area**

**Note:** Because of geometric variations between shapefiles used in the unenrolled agricultural lands analysis performed by OAWP, the unenrolled agricultural acres differ from subtraction of the FSAID VI Agricultural Acres in the BMAP and the Total Agricultural Acres Enrolled referenced in **Table B-2**.

| Category                                                                                                                           | Acres   |
|------------------------------------------------------------------------------------------------------------------------------------|---------|
| Unenrolled agricultural acres                                                                                                      | 116,717 |
| Acres identified within slivers of unenrolled agricultural areas                                                                   | 1,559   |
| Lands without enrollable agricultural activity (e.g., tribal lands, residential development, and parcels with DOR use codes 70-98) | 27,408  |
| Total lands with potentially enrollable agricultural activities                                                                    | 87,749  |

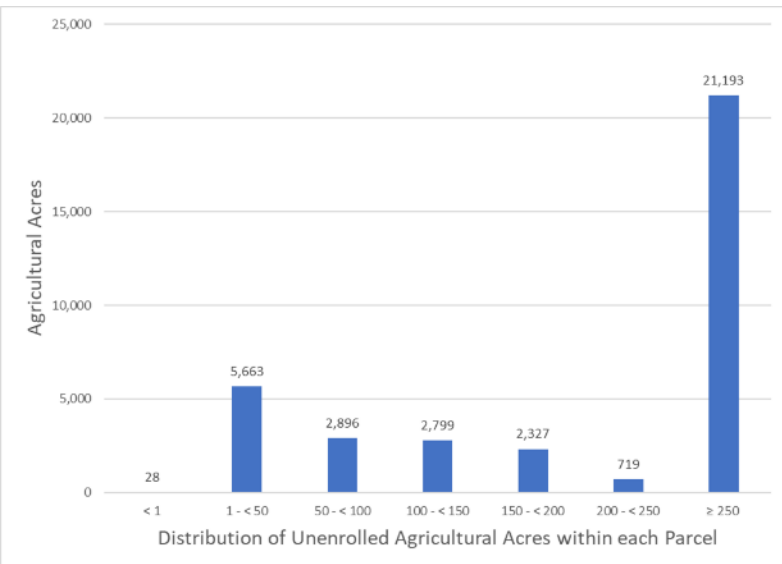
**Table B-8. Agricultural land use change by subwatershed**

| Subwatershed         | Acres |
|----------------------|-------|
| East Caloosahatchee  | 397   |
| Tidal Caloosahatchee | 1,412 |
| West Caloosahatchee  | 1,891 |
| Total                | 3,700 |

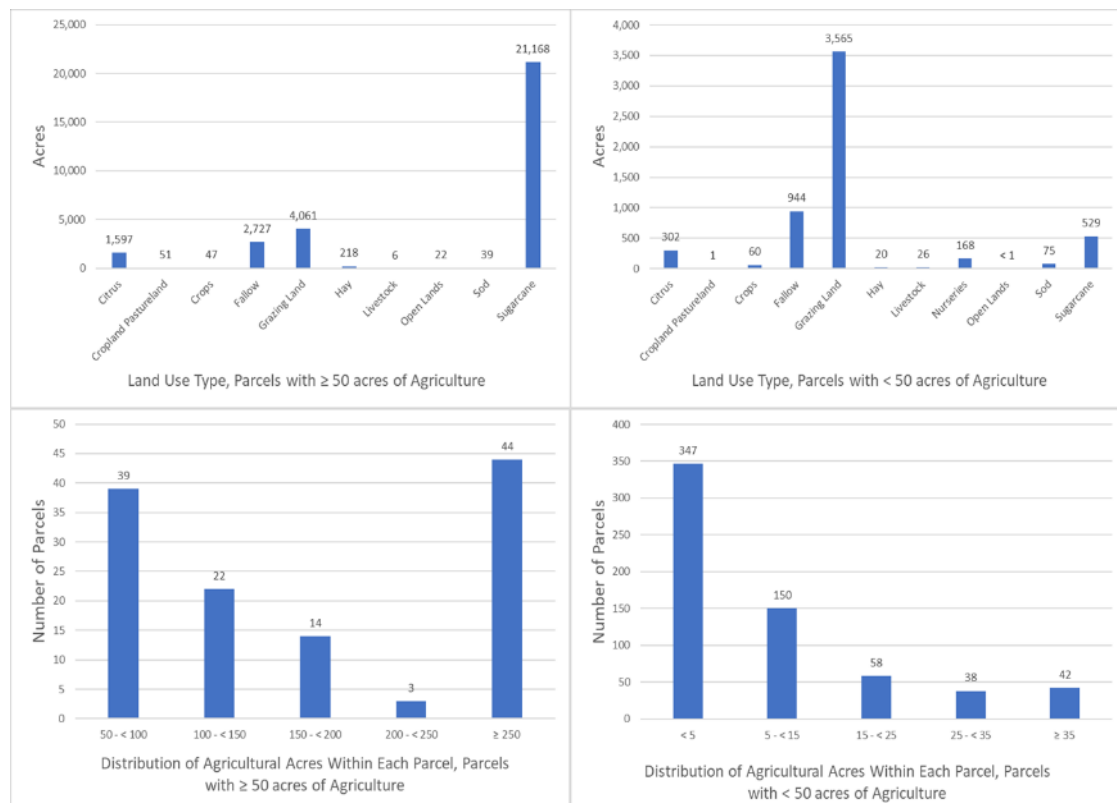


# Appendix B

(continued)



**Figure B-8. Distribution of agricultural acreage on parcels with potential agricultural activity, East Caloosahatchee Subwatershed**



**Figure B-9. Land use type and distribution of agricultural acreage, East Caloosahatchee Subwatershed**



# Appendix C

## *Water Control Districts and Special Districts*

- Background information and BMP plans specific to each WCD available in this appendix
  - Reformatting the way text is included in report\*



# Appendix D

## *RFI Responses*

- **Table D-1** summarizes the submittals.
  - Location Information
    - References TRA IDs and subwatersheds in **Chapter 3** maps
  - Submitted by
    - Name of company that submitted RFI
  - Project Name
    - DEP assigned project name based on RFI information
  - Project Type
    - DEP assigned project type based on RFI information
- Clarified potential future steps for RFI submittals

**Table D-1. Summary of responses received for RFI 2020018**

| Location Information | Submitted by | Project Name | Project Type |
|----------------------|--------------|--------------|--------------|
|----------------------|--------------|--------------|--------------|



# Questions & Comments





# Next Steps

- Finalize edits presented
- Consider any public comments received during this meeting
- Brief DEP Secretary week of January 27, 2020
- Adoption through Secretarial Order
- 21-day notice period before BMAP is effective



# Contact Information

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